



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/809,870

03/26/2004

Yoshihito Asao

Q80584

7600

23373 7590 11/14/2007  
SUGHRUE MION, PLLC  
2100 PENNSYLVANIA AVENUE, N.W.  
SUITE 800  
WASHINGTON, DC 20037

EXAMINER

RUTLAND WALLIS, MICHAEL

ART UNIT

PAPER NUMBER

2836

MAIL DATE

DELIVERY MODE

11/14/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

TH

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/809,870	ASAO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Michael Rutland-Wallis	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 October 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 and 10-17 is/are pending in the application.
- 4a) Of the above claim(s) 2,4,6-8,10 and 12-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,5,11 and 15-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
- 1. ☒ Certified copies of the priority documents have been received.
  - 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/31/2007 has been entered.

### ***Response to Arguments***

Applicant's arguments have been considered but are moot in view of the new grounds of rejection.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 11 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masaki et al. (JP Pub No. 07-007810) in view of Shirakawa et al. (U.S. Pat. No. 6,843,335)

With respect to claim 1 Masaki teaches a vehicle power supply system comprising: a battery (item 12); an inverter unit (item 6) for converting DC electric power of the battery into AC electric power and supplying it to a rotating electric machine (item 3 motor) to drive it; an AC wiring line (item 5) for connecting the rotating electric machine and the inverter unit; and a DC wiring line (item 13) for connecting the inverter unit and the battery (see Fig. 1), wherein the inverter unit is placed in a vicinity of the battery so that the DC wiring line becomes shorter than the AC wiring line (see constitution, i.e. abstract translation). Masaki teaches in figure 1 the battery and the inverter are arranged in the same housing, and further teaches the battery and the inverter is arranged next to each other. Masaki does not teach the use of a metal plate in the connection of the battery to the inverter. Shirakawa teaches a vehicle power supply system comprising: a battery (item 57); an inverter unit (contained within item 1 in Fig. 4) for converting DC electric power of the battery (57) into AC electric power and supplying it to a rotating electric machine (item 54) to drive it. Shirakawa further teaches an electric connection body (items 21 and 22) for electrically connecting the battery (item 57) and the inverter unit is a metal plate (planar conducting member formed with 21-23); and wherein the metal plate directly connects the battery (57) and the inverter (contained within housing item 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Masaki to use a metal plate to directly

connect the battery and the inverter in order to secure the components and to reduce the need mounting space in the vehicle.

With respect to claim 11 Masaki teaches the inverter unit (item 6) is held and fixed (secured in a housing) to the battery (item 12) by the electric connection body (connection wires and secured in housing) for electrically connecting the battery and the inverter unit.

With respect to claim 16 Shirakawa teaches the use of a planar conducting member which is fixed with the inverter unit (contained within item 1). Shirakawa teaches the use of fasteners to affix the metal plate with the battery and the inverter. Shirakawa does not teach the welding of which the plate and the junction board are attached. As welding is a well known means of attaching such circuits it would have been obvious to one of ordinary skill in the art at the time of the invention to weld the board and plate of Shirakawa to form one integral structure to reduce the wiring and maintenance.

Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masaki et al. (JP Pub No. 07-007810) in view of Shirakawa et al. (U.S. Pat. No. 6,843,335) in view of Saka et al. (JP Pub No. 2004-120936)

With respect to claims 3 and 5 Masaki teaches in figure 1 the battery and the inverter are arranged in the same housing, and further teaches the battery and the inverter is arranged next to each other. Masaki does not teach the integral fixing to the upper or side face of the battery. Saka teaches making the battery and the inverter integral (see Solution in translated abstract) fixing of the inverter to the battery. It would

have been obvious to one of ordinary skill in the art at the time of the invention to modify Masaki to integrally fix the inverter to the side or upper face of the battery since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893)

Claims 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masaki et al. (JP Pub No. 07-007810) in view of Shirakawa et al. (U.S. Pat. No. 6,843,335) in further view of Becker (U.S. Pat. No. 4,535,863) Masaki teaches the battery is contained within a housing or container. Shirakawa teaches the battery is contained within a frame housing. Neither Masaki nor Shirakawa clearly picture a tray. Becker teaches the use of a battery tray and securing means. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Masaki and Imai to include the use of a tray in order to provide further means to insure the battery remains in place.

Claims 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masaki et al. (JP Pub No. 07-007810) in view of Shirakawa et al. (U.S. Pat. No. 6,843,335) in further view of Tamba et al. (U.S. Pat. No. 6,621,701) Imai teaches the use of inverter mounted to the vehicle power supply, however neither Masaki nor Shirakawa teach the use of a liquid cooling device to cool the inverter unit. Tamba teaches the use of a liquid cooling device to cool circuitry such as an inverter. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Masaki and Shirakawa to

use a liquid cooling device similar to the one seen in Tamba in order to prevent damage and increase the life of the inverter.

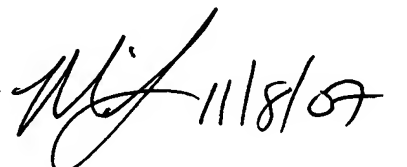
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Rutland-Wallis whose telephone number is 571-272-5921. The examiner can normally be reached on Monday-Thursday 7:30AM-6:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on 571-272-2084. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MRW

  
MICHAEL SHERRY  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800